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THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today...
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 34



UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

MAILED

Ex parte CHUNG-WAI CHIU,
MATTHEW J. HENLEY,
and JAMES P. ZALLIE

DEC - 7 1995

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BOARD OF PATENT APPEALS
AND INTERFERENCES

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U.S. PATENT & TRADEMARK OFFICE

Before SCHAFER, Vice Chief Administrative Patent Judge, and
KIMLIN and GARRIS, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 29-35.

Claims 36-42, the other claims remaining in the present application, stand withdrawn from consideration pursuant to a restriction requirement. Claim 29 is illustrative:

¹ Application for patent filed May 17, 1990.

29. An edible formulation, comprising edible, water soluble hydrolysates of food gums selected from the group consisting of guar gum, locust bean gum, konjac gum, xanthan gum, pectin, carrageenan, and alginates, and combinations thereof, wherein the hydrolysates of food gums have a weight average molecular weight of 500 to 50,000 and an average DP of 3 to 75, and wherein the hydrolysates of food gums function as bulking agents in the edible formulation.

Appellants' claimed invention is directed to an edible formulation comprising water soluble hydrolysates of the recited gums, e.g., guar gum and locust bean gum. The hydrolysates have a weight average molecular weight of 500 to 50,000 and an average DP (degree of polymerization) of 3 to 75. The claimed hydrolysates are used as a substitute for sugar in food formulations, and function as a bulking agent.

In the rejection of the appealed claims, the examiner relies upon the following references:

Hill	3,901,874	Aug. 26, 1975
Tomita et al. (Tomita)	4,971,814	Nov. 20, 1990 (filed Dec. 29, 1989)
Barnett et al. (Barnett) (published Eur. Pat. Application)	0,301,440	Feb. 1, 1989

Appealed claims 29-35 stand rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as being unpatentable over Tomita. The appealed claims also stand rejected under 35 U.S.C. § 103 as being unpatentable over Hill in view of Barnett.

We consider first the rejection over Tomita. The threshold issue to be decided in determining the propriety of this rejection is whether appellants' Rule 1.131 affidavits are sufficient to antedate and remove the Tomita reference. The examiner concedes that the affidavits show a reduction to practice of three of the claimed gum hydrolysates, viz., guar gum, locust bean gum, and tamarind seed gum. However, since Tomita discloses the claimed konjac gum and appellants' affidavits do not show a reduction to practice of such konjac gum, it is the examiner's position that the affidavits, as a matter of law, fail to remove the Tomita reference. Appellants, on the other hand, contend that the affidavits indirectly antedate Tomita because one of ordinary skill in the art would have found it obvious to utilize konjac gum in lieu of guar gum and locust bean gum.

Our review of the applicable case law finds the decision of our predecessor review court in In re Schaub, 537 F.2d 509, 512, 190 USPQ 324, 326 (CCPA 1976) to be controlling here. In discussing In re Stempel, 241 F.2d 755, 113 USPQ 77 (CCPA 1957), the court stated:

We held that this involved too literal a reading of Rule 131 and that "all the applicant can be required to show is priority with respect to so much of the claimed invention as the reference happens to show." And this priority need not always be shown directly. When that species of the generic invention which has been

completed prior to the effective date of the reference would make obvious to one of ordinary skill in the art the species disclosed in the reference, the reference may be said to have been "indirectly antedated." In re Clark, 53 CCPA 954, 356 F.2d 897, 148 USPQ 665 (1966).

In the present case, appellants have advanced persuasive reasoning to support their argument that the skilled artisan would have found hydrolysates of konjac gum to be obvious from hydrolysates of guar gum and locust bean gum. Appellants make the argument that since guar gum and locust bean gum are galactomannan gums which are closely related to konjac gum, a glucomannan gum, guar gum and locust bean gum would have suggested the utility of other hexose backbone heteropolysaccharide food gums such as konjac gum. Appellants point out that konjac gum is a heteropolysaccharide comprising two monosaccharides (glucose and mannose) and, therefore, may be properly classified as a homologue or a very closely related species to guar gum and locust bean gum, which also are heteropolysaccharides comprising two monosaccharides (galactose and mannose). The examiner, for his part, has not offered any rebuttal argument regarding the obviousness of employing konjac gum as a substitute for guar gum and locust bean gum. Accordingly, we will not sustain the examiner's rejections over Tomita, since appellants have prevailed in demonstrating that the species disclosed by Tomita would have been obvious over the

species for which they have established priority to one of ordinary skill in the art.

We now turn to the rejection of appealed claims 29-35 over the collective teachings of Hill and Barnett. Hill discloses the depolymerization of carbohydrates, or polysaccharides, which include hemicelluloses and plant hydrocolloids such as guar gum and locust bean gum, to form hydrolysates that are used as ingredients in and bases for a variety of food products (column 1, lines 9-20 and column 9, lines 21-25). Accordingly, we fully concur with the examiner that it would have been obvious for one of ordinary skill in the art to formulate an edible formulation comprising hydrolysates of guar gum or locust bean gum. Hill does not expressly disclose that the hydrolysates have the claimed average DP of 3 to 75, but, as pointed out by the examiner, Hill discloses that guar and locust bean gum are valuable ingredients in food products "after at least partial depolymerization and/or hydrolysis" (column 9, lines 22 and 23). Consequently, we agree with the examiner that it would have taken only a routine experimentation on the part of the skilled artisan to determine the optimum range of values for the degree of polymerization of guar gum and locust bean gum for the particular food they are incorporated in. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Moreover, when it was the purpose of the

skilled artisan to utilize the hemicelluloses and gums of Hill as a sugar substitute and bulking agent in food products, Barnett evidences the obviousness of employing a polysaccharide which is depolymerized or hydrolyzed to the degree claimed. Appellants do not dispute that the hemicellulosic polysaccharide hydrolysates disclosed by Barnett as sugar-substituting bulking agents have degrees of polymerization within the claimed range.

In contrasting the Hill reference with the claimed edible formulation, appellants suggest that Hill teaches that guar gum only has "benefits in commercial use" (page 16 of Brief). However, as discussed above, Hill expressly teaches that the gum hydrolysates are valuable ingredients in and bases for a variety of food products. We find that Hill's disclosed use as a base for food products strongly suggests its use as a bulking agent. Appellants also maintain that Examples 1 and 2, found at columns 11 and 12 of Hill, evidence that the guar gum of the reference is of a high viscosity. However, Examples 1 and 2 of the reference are not directed to the use of guar gum, but cornstarch. Regarding the specification data noted by appellants, specifically, Table III and Table IV and Example 12, we do not find that data to be of sufficient probative value to outweigh the evidence of obviousness presented by the examiner. In our view, the data simply demonstrates that appellants have

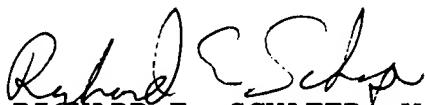
Appeal No. 94-3249
Application 07/525, 943

determined the acceptable degree of polymerization for the gum hydrolysates to be suitable as ingredients for particular good products. There is no evidence of record which establishes that the DP values found acceptable by appellants would have been unexpected to one of ordinary skill in the art. In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In conclusion, the examiner's rejection of the appealed claims under § 102 and § 103 over Tomita is reversed. The rejection of the appealed claims under § 103 over Hill in view of Barnett is affirmed. Accordingly, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED


RICHARD E. SCHAFER, Vice Chief)
Administrative Patent Judge)
)


EDWARD C. KIMLIN)
Administrative Patent Judge)
)

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INTERFERENCES


BRADLEY R. GARRIS)
Administrative Patent Judge)

Appeal No. 94-3249
Application 07/525, 943

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